Lower Falls (SSL Pedon 00P554)

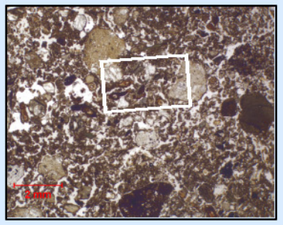

Fig. 1. Brown aggregated fabric of 4Bw2 horizon. Boxes in photo indicate location of higher magnification photomicrographs in adjoining figure.

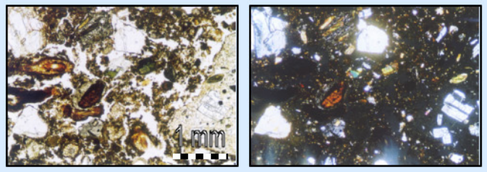

Fig. 2. Higher magnification of Fig. 1 (4Bw2 horizon). Photos illustrate aggregated fine fabric in plane polarized light (PPL) and cross polarized light (XPL). Extinction of fabric under XPL indicates non-crystalline nature of the material.

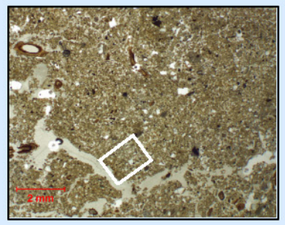

Fig. 3. Fabric of 4Bw3 horizon is less "aggregated" with increased development of organized structural planes (voids) relative to the 4Bw2 horizon.

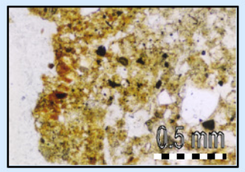

Fig. 4. Higher magnification of Fig. 3. Fe oxides and other non-crystalline material along pore channel. Fabric is increasingly gray in matrix away from void.

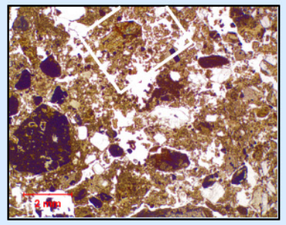

Fig. 5. Reddish brown aggregated fabric of 6Bw1 horizon. Similar to 4Bw2 horizon.

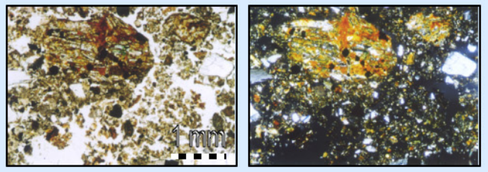

Fig. 6. Higher magnification of Fig. 5. Very coarse sand-sized rock fragment undergoing weathering with deposition of crystalline clay (kaolinite?) along planes of the mineral grains.

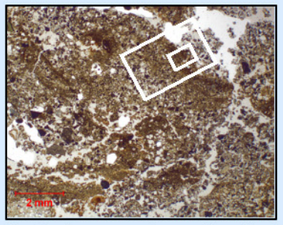

Fig. 7. Concentrated zones (bands) of fine material apparently cemented by tephra weathering products in the 6Bw2 horizon.

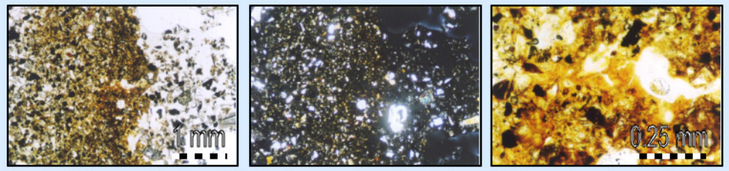

Fig. 8. Higher magnification of Fig. 7. Cross-section of banded material illustrating color and isotropic nature of material "cementing" grains in band.

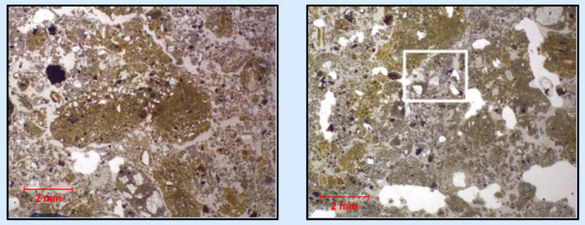

Fig. 9. Two photomicrographs of fabric from the 6Bw3 horizon. The zones (reddish brown to yellow in color) appear in both a nodular and elongated form.

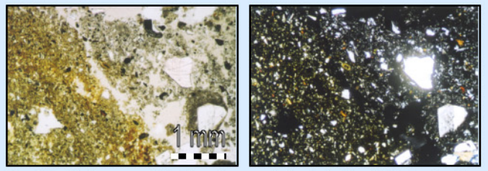

Fig. 10. Higher magnification of second photo in Fig. 9 illustrating the edge of the brownish area. Note both the fairly abrupt boundary from the gray matrix, separated by a void, and the similar concentration of crystalline grains in both fabrics.

Timbered Peak (SSL Pedon 00P555)

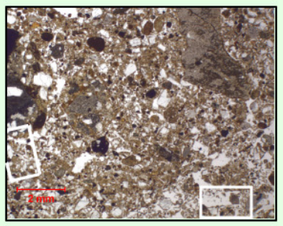

Fig. 11. Fabric of the 2Bs horizon. Note the uniform color of the fabric.

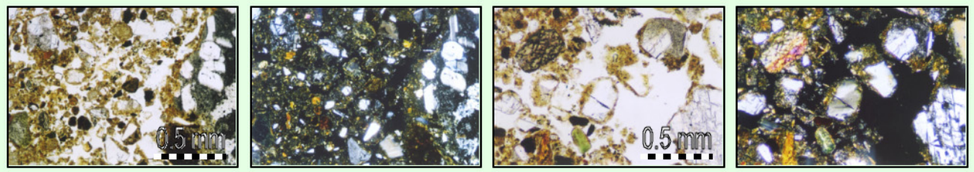

Fig. 12. Higher magnification of Fig. 11. Fine material is between and adhering to sand and silt-sized grains.

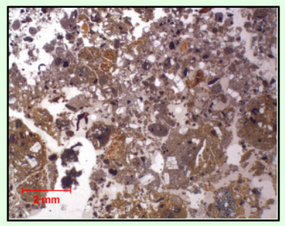

Fig. 13. Areas of reddish brown fabric of the 6Bw horizon that are concentrated in zones or patches with a relatively abrupt boundary with the adjoining gray matrix.

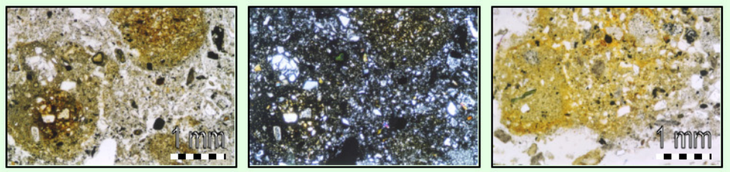

Fig. 14. Examples of areas in the 6Bw horizon illustrating nature of differential coloration of horizon.

Midway (SSL Pedon 00P556)

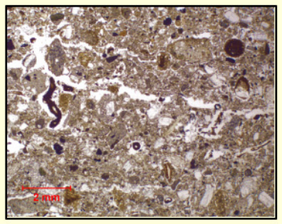

Fig. 15. The 3Bw1 horizon illustrating uniform color of matrix. Horizontal voids (channels) suggest platy soil structure.

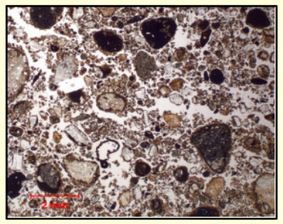

Fig. 16. Increased aggregation of 3Bw2 horizon (similar to 4Bw horizons of Lower Falls pedon).

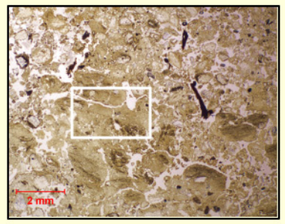

Fig. 17. Fine-textured nature of 3Bw3 horizon relative to overlying horizons suggests the ashy nature of the material. Note the variable coloration.

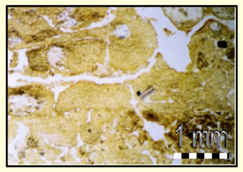

Fig. 18. Higher magnification of Fig. 17.

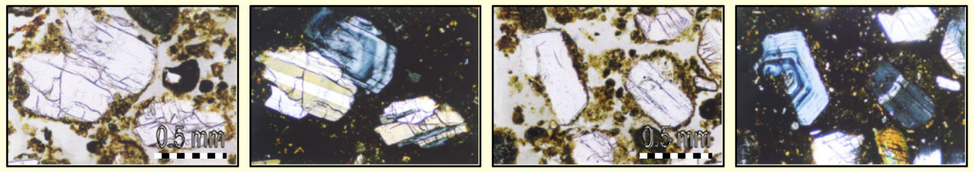

Fig. 19. Examples of fine fabric and sand-sized grains in the 5Bw horizon. Fine material has an aggregated appearance. Note the twinning and oscillatory zonation of the plagioclase feldspars in photomicrographs.

Curley Creek Rd. (SSL Pedon 00P553)

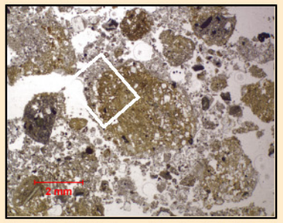

Fig. 20. Variations of color in fabric of 4Bw4 horizon.

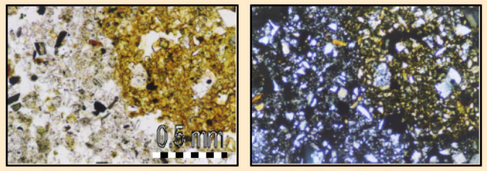

Fig. 21. Higher magnification of Fig. 20. Note the abrupt contact between the reddish brown area and the adjoining gray matrix.

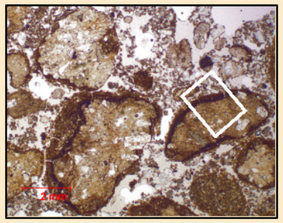

Fig. 22. Gravel-sized pumice fragments in the 4Bw5 horizon. Note the embedded crystalline grains in the pumice.

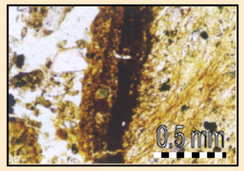

Fig. 23. Higher magnification of Fig. 22. Note the dark rind of non-crystalline material around the pumice.

Micromorphology of Tephra Horizons of Selected Andisols, Gifford-Pinchot National Forest

Photomicrographs and interpretations by M.A. Wilson, Soil Survey Laboratory, NRCS, USDA